

35 U.S.C. 103(a) as being unpatentable over Gardner. Finally, claims 13, 20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner in view of Giaier, et al., U.S. Patent 4,602,572 (hereinafter "Giaier").

Claims 14 and 21 are objected to as being dependent on a rejected base claim.

The above rejections are respectfully traversed.

Considering the rejection based on 35 USC 102(b) in view of Gardner, claims 24-25 have been withdrawn. The remaining independent claim under this rejection is claim 1.

It is acknowledged that Claim 1 recites certain elements that the PTO advances as being taught by Gardner. These elements are necessary elements of most modern limestone preheaters, i.e., "a ... preheating chamber with a sloped floor" "a material outlet", a "gas inlet", and "at least one reciprocally moveable material pusher for moving particulate material in the lower chamber toward the material outlet". However, it is noted that it was not alleged by the PTO that Gardner teaches other crucial elements recited in Claim 1- for example, "a roof having... a plurality of holes that extend therethrough, each of which are located near the perimeter of the roof and which are arranged in a circular array"; "an upper preheating and material delivery area comprising a plurality of essentially vertically oriented, elongated hollow feed cassettes"; "delivering... preheated material to the....lower chamber through the holes in the roof to form material piles on the outer annular section wherein said cassettes are not in contact with and are spaced from each other and are spaced from the perimeter of the roof".

Anticipation under 35 U.S.C. § 102 means lack of novelty, and is a question of fact. To anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. Karsten Mfg. Corp. v. Cleveland Golf Co., 242 F.3d 1376, 1383, (Fed. Cir. 2001); Scripps Clinic & Research Foundation v. Genentech, Inc., 927 F.2d 1565, 1576, (Fed. Cir. 1991). It is clear that the elements referenced above are not taught by Gardner and in fact were not advanced by the PTO as being taught by Gardner. Therefore, anticipation under 35 U.S.C. § 102 has not been established, and the rejection of claim 1, and accordingly the rejection of the dependent claims thereunder that also stand rejected under 35 U.S.C. § 102 (claims 2, 3, 6, and 8-12) should be withdrawn.

With regard to the rejection of claims 4-5, 7, 15-19, and 22 as being unpatentable under Gardner, claims 4-5 and 7 are also dependent upon claim 1 and, therefore, the above arguments concerning the insufficiency of teachings of the Gardner reference vis a vis claim 1 are also relevant with regard to a rejection under 35 USC 103 (a) and are incorporated by reference.

With regard to independent claim 15 (and claims 16-19 and 22 which are dependent thereon), it

is not seen where Gardner teaches, to name but a few elements, “a flat, essentially circular roof having...a plurality of holes that extend therethrough which are arranged in a circular array near the perimeter of the roof”; “an upper preheating and material delivery area comprising a plurality of essentially vertically oriented, elongated hollow feed cassettes for preheating particular materialto the outer annular section of the lower chamber through the holes in the roof to form material piles on the outer annular section”; “each cassette being evenly spaced from each other evenly spaced from the perimeter of the roof”; each cassette having “a truncated conical shape and a symmetrical horizontal cross section”; “wherein each cassette is positioned over at least one hole” and “wherein said cassettes are not in contact with and are spaced from each other and are spaced the perimeter of the roof”.

The assertion by the PTO that claimed cassette shape is an obvious “design choice” belies the fact that all the other elements are not present in the Gardner reference and are not even acknowledged in the present rejection. However, with regard to the subject of design choices, it is noted that the Applicants clearly indicate in their specification that this invention has functional advantages, in that

“As a result of the placement of cassettes 30, material discharged from each cassette 30 will, through its natural angle of repose, form piles 40 on the sloped floor which are spaced from both (a) the material piles discharged from each immediately adjacent feed cassette 30 and (b) side walls 17 of lower preheater area 11. As a result, it is an unique feature of this invention that preheating air will have an easy passage between each of the material piles 40 and also through an annular passageway formed by the space between each material pile 40 and side walls 17 of lower preheating chamber 11, thus ensuring substantial and uniform material/air contact throughout lower preheating area 11. With reference to Figures 1 and 2, preheating air will travel radially from discharge 19 between material piles 40 via passageways 50 (only one of which is depicted in Figure 2), which are formed between adjacent material piles 40 by the natural angle of repose of each material pile 40. The air will travel through passageways 50 to the inner side wall 17 of the preheater. Once there, the air will travel along rear annular air passageway 51 which, when cassettes 30 form a ring on upper side 14 of roof 13, extends completely around the inner perimeter of the lower preheating chamber and which is the result of the placement of cassettes 30 away from perimeter 22 and the natural angle of repose of the

material piles from each cassette 30." (page 5, line 14- page 6, line 3 of the Applicants' specification)

Other advantages of the design are taught in the specification. In a proper obviousness determination, "whether the changes from the prior art are 'minor', . . . the changes must be evaluated in terms of the whole invention, including whether the prior art provides any teaching or suggestion to one of ordinary skill in the art to make the changes that would produce the patentee's . . . device." Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 935, 15 U.S.P.Q.2D (BNA) 1321, 1324 (Fed. Cir.), cert. denied, 498 U.S. 920, 112 L. Ed. 2d 250, 111 S. Ct. 296 (1990). This includes what could be characterized as simple changes, as in In re Gordon, 733 F.2d 900, 902, 221 U.S.P.Q. (BNA) 1125, 1127 (Fed. Cir. 1984).

Clearly, there is no teaching in Gardner that suggests making any of the design changes claimed in the present application. Accordingly, the rejection of claims 4 – 5, 7, 15 – 19, and 22 under 35 U.S.C. 103(a) as being unpatentable over Gardner should be withdrawn.

With regard to the rejection of claims 13, 20 and 23 under 35 U.S.C. 103(a) as being unpatentable over Gardner in view of Giaier, it is submitted that the teachings of Giaier re a "stepped pusher" do not overcome the deficiencies inherent in the Gardner reference as noted above. Claim 13 is ultimately dependent upon claim 1 and claims 20 and 23 are ultimately dependent upon claim 15. Since these claims will of course contain all the elements present in their respective parent claim, the above arguments concerning the inadequacies inherent in the Gardner reference are relevant to this rejection. Therefore, it is submitted that the rejection of claims 13, 20 and 23 under 35 U.S.C. 103(a) as being unpatentable over Gardner in view of Giaier should be withdrawn.

In view of the above amendment and remarks, withdrawal of the pending rejections and passage of the application to allowance are respectfully requested.

Respectfully submitted,



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